

WHAT IS CLAIMED IS:

1. A method for producing a phosphor comprising burning a phosphor material containing elements constituting a host material
5 of the phosphor and an activator or compounds containing the elements by heating,

wherein, in the burning, the phosphor material is continuously passed through a rotating tubular heating furnace disposed in a tilting manner with respect to a horizon to be heated and burned
10 in the heating furnace, and the burned material continuously discharged from the heating furnace is cooled down.

2. The method for producing a phosphor as set forth in claim 1, wherein an inside of the heating furnace is kept to be in an oxygen-free state.

15 3. The method for producing a phosphor as set forth in claim 1, wherein an inside of the heating furnace is kept to be in an inert-gas atmosphere or in a reducing gas atmosphere.

4. The method for producing a phosphor as set forth in claim 1, wherein a tilt angle of the heating furnace is adjusted so that
20 the phosphor material is stayed in the heating furnace for a sufficient time to be burned while moving in the heating furnace.

5. The method for producing a phosphor as set forth in claim 1, wherein a rotational speed of the heating furnace is 0.5 to 50 rotations/minute.

25 6. An apparatus for producing a phosphor comprising a burning apparatus burning a phosphor material containing elements constituting a host material of the phosphor and an activator or compounds containing the elements by heating,

wherein the burning apparatus is disposed in a tilting manner with respect to a horizon and have a tubular heating furnace rotating around a center axis, a mechanism to continuously feed the phosphor material from an upper end portion of the heating furnace, a mechanism
5 to continuously discharge the burned material from a lower end portion of the heating furnace, and a cooling section to cool down the burned material continuously discharged from the heating furnace.

7. The apparatus for producing a phosphor as set forth in claim 6, wherein the heating furnace has a tubular heat-resistant
10 container made of quartz or alumina.

8. The apparatus for producing the phosphor as set forth in claim 6,

wherein the heating furnace has an introducing mechanism of an inert gas or reducing gas and a discharging mechanism of the inert
15 gas or reducing gas, respectively.

9. A phosphor produced by the method for producing a phosphor as set forth in claim 1.

10. The phosphor as set forth in claim 9, comprising particles of which each ratio of a major axis to a minor axis ranges from 1.0
20 to 1.5.